DOCUMENT RESUME

ED 380 893 EA 026 606

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TITLE Compensation and Skill Development in Four Professions and Implications for the Teaching Profession.
INSTITUTION Consortium for Policy Research in Education, Madison, WI. Finance Center.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.; Pew Charitable Trusts, Philadelphia, PA.
PUB DATE Feb 95
CONTRACT R117G10039
NOTE 42p.
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Career Development; *Compensation (Remuneration); Elementary Secondary Education; *Faculty Development; Faculty Evaluation; Incentives; Performance; *Teacher Competencies; Teacher Employment; Teacher Promotion; *Teacher Salaries; Teaching (Occupation)

ABSTRACT

Current teacher-compensation policies typically reward teachers for years of experience and level of knowledge as measured by educational credits. However, the current system does little to encourage teachers to develop the skills needed to achieve organizational goals. This paper examines the compensation systems in four complex, knowledge-based professions to identify a set of principles that could be used to improve teacher compensation. In various ways, the compensation programs in these professions link pay to the development of knowledge and skills for the pursuit of organizational goals. The paper draws lessons from the four models--compensation in law, higher education, actuarial science, and financial analysis--to suggest ways to modify the current teacher-compensation system to build teachers' skill and knowledge in support of organizational objectives. First, the teaching profession could benefit from a compensation and career-development system designed with elements of skill-based pay. Second, teacher knowledge and skills should be identified and assessed both internally and externally by members of the teaching profession. Finally, the experience of the four professions shows that skill-based pay is a workable strategy. One table is included. (Contains 38 references.) (LMI)

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COMPENSATION AND SKILL DEVELOPMENT IN FOUR PROFESSIONS AND IMPLICATIONS FOR THE TEACHING PROFESSION

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February 27, 1995

The research reported in this article was supported by a grant from the Pew Charitable Trust, the Consortium for Policy Research in Education (CPRE) Finance Center (Grant No. OERI-R117-G10039), and by the Wisconsin Center for Education Research, School of Education, University of Wisconsin-Madison. The opinions expressed in this article are those of the authors and do not necessarily reflect the views of the Pew Charitable Trust, the U.S. Department of Education, the Office of Educational Research and Improvement, the institutional partners of CPRE, or the Wisconsin Center for Education Research.

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ABSTRACT

This article examines compensation and career development in four complex, knowledge-based professions and draws implications for the development of a professional career progression in teaching. Evidence from law, higher education, actuarial science, and financial analysis suggest that teachers could benefit from a compensation system linked to professional growth and development.

COMPENSATION AND SKILL DEVELOPMENT IN FOUR PROFESSIONS AND IMPLICATIONS FOR THE TEACHING PROFESSION

As it is currently constituted, teacher compensation typically rewards teachers for years of experience and level of knowledge as measured by educational credits. However, the current system does little to encourage teachers to develop the skills needed to achieve organizational goals. Recently, some educational researchers have suggested that new approaches to compensation are needed to better support teacher career development and educational reform efforts (Conley & Odden, 1994; Mohrman, Mohrman & Odden, 1994; Odden & Conley, 1992; Firestone, 1994). This paper examines the compensation systems in four complex, knowledge-based professions to identify a set of principles which could be used to improve teacher compensation. In various ways, the compensation systems in these professions link pay to the development of knowledge and skills for the pursuit of organizational goals. Lessons from the four models -- compensation in law, higher education, actuarial science, and financial analysis -- are drawn to suggest possible modifications to the current teacher compensation system which better build teachers' knowledge and skills in support of organizational objectives.

TEACHER COMPENSATION AND CAREER DEVELOPMENT

In most districts, teachers receive salary increments for years of experience and the accumulation of educational credits. By encouraging continued course-taking, this approach acknowledges the value of lifelong learning, and provides incentives for renewing and expanding the knowledge base of teachers. However, in many districts, requirements about the types of courses that qualify for increased pay are minimal. Thus, teachers may have stronger incentives to select courses that meet their own individual goals (e.g., courses that are convenient and of personal interest) than to select courses that build skills needed to achieve organizational goals. In addition, there are few incentives for colleges, universities, and professional developers to clearly identify the skills needed by teachers to achieve the educational goals of schools and to design courses to address these needs. As a result, the current compensation system rewards course taking which may not represent increased knowledge in areas likely to improve student performance.

However, one important advantage of the current teacher compensation system (i.e., the single salary schedule) is that pay increases are based on quantitative measures (years of

teaching experience and number of credits). Thus, teachers and administrators may view this system as objective, predictable, and fair (Protsik, 1995). Despite this advantage, the current system does little to support the development of teacher knowledge and skills relevant to new demands being placed on teachers, such as:

- in depth mastery of subject matter content and pedagogical approaches, such as those represented in the new national curriculum standards (e.g., those of the National Council of Teachers of Mathematics (1989));
- management and leadership skills demanded by new approaches to school organization, such as school-based high involvement management (Mohrman, Wohlstetter & Associates, 1994; Wohlstetter, Smyer & Mohrman, 1994); and
- increased emphasis on student outcomes and achievement, which may require new skills in action research, pedagogy, curriculum development, and assessment.

Current incentives and career development opportunities may not provide teachers with the skills they need to perform to these new expectations. For example, research on the implementation of new curriculum frameworks in some states has shown that teachers often lack the knowledge and skills needed to implement these approaches (Cohen, 1990; Ball, Cohen, Peterson & Wilson, 1994).

Alternative compensation structures might provide incentives for teachers to focus their development of knowledge and skills to meeting key school objectives.

Past efforts to modify the compensation system have focused primarily on adding rewards for individual performance (i.e., merit pay). These efforts have been criticized for failing to meet tests of objectivity and fairness. In addition, merit pay has proven to be incompatible with cooperative work environments, such as schools, as pay based on comparisons of individuals can create a competitive, divisive atmosphere (Murnane & Cohen, 1986; Hatry, Greiner & Ashford, 1994).

However, merit pay is just one of a variety of potential modifications to the single salary schedule. Two other alternatives include skill-based pay and collective incentives. Skill-based pay compensates individuals for developing knowledge and skills in areas identified by the organization as being important to achieving organizational goals and objectives. Collective incentives compensate teams or entire organizations for high or improved performance attributable to collective effort (Lawler, 1990). To date, much of the research on skill-based pay has focused on its effectiveness in a manufacturing setting. The research suggests that skill-based pay, combined with decentralized management, can improve organizational

performance (Jenkins, Ledford, Gupta & Doty, 1992; Gupta, Schweizer & Jenkins, 1987). In this paper, we expand the existing research base by examining the ways compensation is used to support knowledge and skill development in four complex, knowledge-based professions in an effort to identify some basic principles which might be applied to compensation for the teaching profession.

COMPENSATION AND CAREER DEVELOPMENT IN FOUR PROFESSIONS

Elements of skill-based pay and performance incentives have been used in many professions in conjunction with other human resource policies to promote career development and the achievement of organizational goals. This section describes compensation and human resource policies commonly used for attorneys, professors, actuaries, and financial analysts. These four professions were selected because, like teaching, all are complex, knowledge-intensive professions operating in dynamic organizational environments. By examining four different models, it is possible to see variations in the application of the principles of skill-based pay in the context of specific organizational goals and settings. In addition, the compensation and career development approaches in these professions are fully

implemented, and can provide educational policy makers, teachers, and administrators with some insight into the usefulness and applicability of alternatives to current approaches to teacher compensation.

Law Firms

Compensation and career development in law incorporates principles of pre-service education and assessment by an external professional body, continuing education, localized performance assessment, and localized skill assessment. Compensation is linked to achievement of preservice education and assessment, performance, and skill development, in a two- to four-stage career progression.

In order to be eligible to practice law, individuals must first attend an accredited law school, normally three years beyond the baccalaureate degree, and receive a doctorate of jurisprudence (J.D.). In addition, aspiring attorneys must pass the state bar exam, which assesses knowledge of general law, and knowledge of laws specific to the individual state.

As a result of the large personal investment in skill development prior to entering the profession, initial salaries for attorneys tend to be high relative to other professions. Once hired, large traditional law firms use an internally-driven

system of skill-based pay in which associate attorneys are expected to have demonstrated a broad set of skills within seven to nine years to advance to the status of partner (for firms which are partnerships) or owner (for firms which are professional corporations). Attorneys are expected to apply the general knowledge of law assessed in the state bar exam and develop and utilize specialized knowledge needed by the specific firm. In addition to specialized knowledge of law, management skills, political and public relations skills, marketing and client development skills, and leadership skills are among the skills valued in today's law firm (Heller & Hunt, 1988).

Some firms have adopted a more graduated career path, along which attorneys progress through the ranks of associate, senior associate, non-voting partner (or non-equity partner), and finally partner (or owner) (American Law Institute, 1984). In progressing through the ranks, attorneys are evaluated by the individual law firm's partners (owners) on demonstration of breadth and depth in key skill areas.

In addition to compensation based on the development of skills and knowledge over time, attorneys also receive performance-based pay. Typically, all inexperienced associates hired in a given year are considered members of the same "class," and start at the same level of compensation. Each year,

associate attorneys receive annual adjustments based on individual performance; hence, after the first year, the salaries of members of the same class will begin to diverge.

While the individual attorney is primarily responsible for his or her own professional development, many law firms assign mentors to the associates, and provide resources (e.g., funds to cover professional meetings and seminars) to promote the ongoing development of key skills. Additionally, the state bar associations promote professional development by requiring attorneys to attain continuing legal education credits in approved courses and/or seminars in order to remain in good standing with the bar.[1]

Most law firms ascribe to the "up or out" policy. If an associate fails to make the step up to partner, he or she must leave the firm. Recently, a number of firms have recognized that some very competent attorneys may not have the desire to become partners, yet they still make a valuable contribution to the firm. Hence, some firms have developed "non-partner" tracks, under which "staff attorneys" are subject to less pressure at review time and enjoy greater flexibility with respect to hours of work and assignments. Their jobs are less secure and lower paid, however, than are those of attorneys who have made the step up to partner (Reed, 1988).

Partners are typically paid a base salary and receive quarterly supplements based on the firm's profits. Owners have equity in the corporation, and are thus rewarded when the corporate shares increase in value.

Thus, the compensation and career development system for attorneys serves to shape the initial training and professional development of attorneys. Law school programs, state bar exams, continuing coursework, and assessments by partners identify, transmit, and assess a body of knowledge and renew and update that knowledge base throughout the career of the attorney. In addition, the bar exam provides law schools with powerful incentives to focus their programs on the knowledge base covered in the exams.

Although levels of compensation are determined locally by the firm, the body of knowledge for attorneys is determined and assessed both externally by members of the profession and locally by members of the firm. External professional development and assessment -- the state bar exam and continuing education courses -- transmit a body of knowledge thought to be needed universally by all members of the profession. These serve to standardize the profession and provide the public with confidence that a licensed attorney is qualified to practice law. Internal professional development and assessment -- in-service training, mentoring, and

skill and performance assessment by senior members of the firm -- serve to transmit specialized skills and knowledge needed by that particular law firm in order to operate effectively.

Research Universities

The compensation and career development path for professors in research universities includes pre-service education, and performance and skill assessment measured locally using externally-driven standards. Compensation is linked to skill development and performance, and careers progress in three stages.

In order to become a professor in a research university, an individual must typically receive a doctoral degree (e.g., Ph.D., E.D.D., D.B.A.) from a reputable research university. Assessment of a candidate's knowledge and skills is made by professors in the department or school, and is based on review of a portfolio of work, including publications and other written work, oral presentation, interviews, employment and education history, and academic references. Despite the large investment in training required, starting salaries for professors are low relative to similarly educated individuals in other professions.

Once hired, professors are compensated based on a combination of skill-based pay and performance-based pay. The

core of higher education compensation is the tenure system, present in approximately 85 percent of colleges and universities (Chait & Ford, 1982). The tenure system is a skill-based pay and career development system which identifies and assesses mastery of research, teaching, and public service skills. Skills must be demonstrated in order to be acknowledged, and the guidelines of the American Association of University Professors suggest that mastery of the first skill block should occur within seven years (Chait & Ford, 1982).

Skill level mastery is determined and assessed locally, but with strong credence given to the opinions of other professionals in the same academic field, reflected by the ability to publish in peer reviewed journals, offers from other institutions, and professional references. Professors at the department or school level (within field) and at the university level (across fields) determine whether the level of mastery of knowledge and skills meets university standards, and whether the knowledge and skills demonstrated serve the organizational goals of the department, school, and university.

If sufficient skill proficiency and knowledge attainment is demonstrated, the career progression is from assistant, to associate (with tenure), to full professor. As in law firms, most universities practice an "up or out" policy in moving from

the assistant to the associate level. In addition, professors are compensated based on individual merit, as assessed by colleagues at the department or school level.

Professional development is largely the responsibility of the individual professor, although many institutions provide a variety of professional development opportunities. These include formal and informal mentoring programs, teaching resource centers, library resources, grants for faculty research, and funds for travel to professional meetings.

The compensation and career development structure for professors in research universities serves the organizational goals of maintaining a current knowledge base and high standards of scholarship through a combination of internal and external assessment indicators. Faculty are promoted and awarded merit increases based in part on publication in peer review journals, and the evaluation of work by peers. This peer review system serves a similar function to that of the bar exam and continuing education in the law profession: it signals that faculty are capable of producing high quality, up-to-date scholarship recognized by those within the department and throughout the field.

Compensation and career development in the next two

professions include no specialized pre-service training, but recognize national programs that offer continuing education, communications and symposiums, and accreditation. In the field of actuarial science, the Society of Actuaries (devoted to life insurance) and the Casualty Actuarial Society (devoted to property and casualty insurance) each administer a series of courses and examinations to promote high standards of competency and conduct among their members and to advance the state of actuarial science (Society of Actuaries, 1993; Casualty Actuarial Society, 1994). Similarly, the Association for Investment Management and Research offers the Chartered Financial Analyst program of study and examination to further the knowledge, skills, and professionalism of investment professionals. Both professions have four levels of career progression, determined by mastery of specific knowledge and skills. These approaches may be particularly interesting to educators in light of the recent development of national teacher examinations which attempt to identify and certify teachers prepared to enter the field of teaching (e.g., the Interstate New Teacher Assessment and Support Consortium (1992)) and those who have developed over time into expert teachers (i.e., the National Board for Professional Teaching Standards (1989)).

Actuarial Departments

Individuals entering the actuarial science profession typically have an undergraduate degree in math, but rarely have much formal training in actuarial science. Thus, starting salaries for actuaries are somewhat lower than for professions requiring a large, specialized preservice investment in human capital.

The national programs of study and examination developed and administered by the Casualty Actuarial Society (CAS) and the Society of Actuaries (SOA) are the main means of developing and assessing the skills and knowledge of professionals in actuarial science. Insurance companies generally regard successful completion of the societies' exams as an indication of mastery of skills critical to the effective operation of their actuarial departments. As actuaries pass more examinations, their companies typically award them salary increases, with the largest increases awarded after achievement of the levels of Associate and then Fellow (described below). Individual performance, team efforts, and company-wide performance also influence the compensation of actuaries, but the degree of knowledge and skills exhibited via the successful completion of the Societies' course work is the primary determinant of compensation.

The specific designs of the CAS and SOA programs differ in

terms of their degree of specialization and are worthy of description. The CAS program consists of examinations in ten different subject areas (e.g., mathematics, statistics, economics and finance, rate making, reserving, and insurance law). Successful completion of examinations in the first seven areas earns the designation of "Associate"; all ten, "Fellow" (CAS, 1994). Progress toward the designation of Associate is based mainly on development of a wider breadth of skills. The final three examinations required to achieve the designation of Fellow introduce some new breadth, but primarily advance the depth of understanding of key actuarial skills.

The SOA program is similar in design, but is based on a credit system. Each successfully completed examination is assigned a specific number of course credits. Each course represents a body of knowledge, and students study materials recommended by the SOA on their own in order to prepare for the examinations. Achieving the Associate level in the SOA program requires successful completion of examinations equivalent to 255 credits in core courses (mainly in math and statistics) and 45 credits in elective courses (e.g., life insurance law and taxation, design of group benefits, pension valuation, and design of retirement programs). Fellows must complete, in addition to the requirements for the Associate level, a set of core courses

for Fellowship: 90 credits in one of four specialties, and 60 more elective credits. The four specialty tracks, which cover advanced actuarial practice, are: Finance, Group Benefits, Individual Life and Annuity, and Pension (SOA, 1993). By requiring both a wide array of core courses and an area of specialization, the SOA program promotes the development of both horizontal and depth skills.

The CAS and SOA suggest appropriate reading materials and problems for each course. It is the responsibility of the actuarial students to obtain copies of the recommended texts. Insurance companies often reimburse actuarial students for registration fees and the costs of books and materials upon successful completion of the exam. Companies also typically grant actuarial students 100 hours of work time per exam for independent study, and expect that the actuarial students will put in at least as many hours of studying on their own time.

These standardized, national examinations work well in the field of actuarial science, where the core skills and knowledge critical to actuarial departments are uniform across companies. Additionally, while it would be difficult and time consuming for individual insurance companies to individually evaluate their actuaries' skills, the external national evaluation is more efficient and objective, and provides an additional degree of

accountability by promoting and signaling high standards of conduct and competency.

Financial Companies

Financial analysts enter the profession with an undergraduate degree, often in business, math, or economics. They rarely have any preservice training in financial analysis, and are hired at a relatively low starting salary.

Financial and investment companies regard the Chartered Financial Analyst (CFA) program of study and examination offered by the Association for Investment Management and Research (AIMR) in much the same way as insurance companies regard the actuarial societies' programs, recognizing and rewarding the knowledge, skills, and professionalism that CFAs and CFA candidates can contribute to their organizations (AIMR, 1993). Whereas progression in the actuarial programs focuses primarily on increasing the breadth of skills across different topics, the CFA program focuses on expanding the depth of knowledge and skills across all seven major topic areas which comprise the program's "Body of Knowledge."[2] At Level I, CFA candidates develop a basic understanding of the tools and concepts that apply to investment valuation and management. At Level II, that knowledge is

deepened and is applied in the analysis of specific assets. Finally, at Level III, candidates build on the first two levels toward an even higher application: demonstrating the ability to synthesize and evaluate real world information for portfolio management (AIMR, 1993).

The Level I examination is composed of multiple choice questions, problems, and short essay questions, while the Level II and III exams consist entirely of problems, cases, and essays. (AIMR, 1993). Financial analysts generally study on their own or in small, informal study groups for these exams. Investment firms often reimburse CFA candidates for the cost of books and registration fees upon successful completion of each level of exams. Individuals who sequentially pass the three examinations, have had at least three years of experience in financial analysis, and adhere to the AIMR's Code of Ethics and Standards of Professional Conduct are awarded the CFA charter (AIMR, 1993). While the pay raises are not as automatic for CFA candidates as for actuarial students, financial analysts who make progress with the CFA exams are more in demand by investment companies, and their salaries generally reflect the demand for these skills.

PRESENT SYSTEM OF COMPENSATION AND CAREER DEVELOPMENT FOR TEACHERS

At this point it may be useful to consider the ways in which

compensation and professional development opportunities currently support teacher career development. The compensation and career development system for teachers incorporates pre-service education and assessment by an external government body, and continuing education. Compensation is linked to achievement of preservice education and assessment, and number of educational credits and graduate degrees obtained. Unlike the four professions described above, there is currently no clear career progression for teachers in the United States. However, some interesting efforts are being made to identify teachers who possess entry-level teaching skills, and those who have attained a high level of competency. These efforts will be discussed further below.

Depending on the state and age of children to be taught, individuals interested in becoming teachers must obtain an undergraduate degree in education, or an undergraduate degree plus coursework leading to a teaching credential. There is usually no requirement that the degree be obtained from an accredited institution, and only 40 percent of teacher education programs are currently accredited (Darling-Hammond, 1994). Many states also administer minimum competency examinations, which assess basic academic skills and are designed to protect the public from clearly unqualified candidates.

Thus, teachers receive some specialized preservice training in education, although the expectation is that teaching knowledge and skills will continue to develop on the job. Comparing teaching to the four professions described above, teachers receive more specialized preservice training than actuaries and financial analysts, but much less than attorneys and professors.

In order to maintain their teaching license, teachers must continue to take courses or attend workshops throughout their careers (much like lawyers). The state or district identifies courses and staff development activities which qualify for credit. Teachers receive salary increments for accumulating graduate course credits, although in most cases teachers have broad latitude in determining the types of courses that qualify for credit. The relevance of courses to organizational needs is rarely assessed. Typically, the career progression for teachers has been from teaching into administrative tracks at the school or district level (Darling-Hammond, 1994; Kelley, 1995).

This career development model for teachers is somewhat weaker than that for the four professions described above. There is no clear progression from beginning, to intermediate, to expert teacher, and no clear recognition of teachers as they develop knowledge and skills. The lack of a clear professional development path exists, despite research which suggests that

Table 1: Skill Development, Assessment, and Compensation in Four Professions

	Attorney	Professor	P&C Actuary	Financial Analyst
PROGRESSION IN PROFESSION				
Entrance Requirements	J.D., Bar Exam	Ph.D.	B.A. or B.S.	B.A. or B.S.
Entry Position	Associate Attorney	Assistant Professor	Actuarial Student (0-2 Exams)	Analyst
Intermediate Positions	Senior Associate	Associate Professor (After 7-10 years)	Actuarial Student (3-6 Exams)	Level I CFA Candidate
	Junior Partner		Associate (7-9 Exams)	Level II CFA Candidate
Advanced Position	Partner (After 7-9 years)	Full Professor	Fellow (10 Exams)	CFA (Passed Level III)
MAJOR PROFESSIONAL ORGANIZATIONS	Bar Associations	Discipline-Based Associations	CAS	CFA
ASSESSMENT OF SKILLS				
External	State Bar*	Peer Review	CAS Exams*	CFA Exams Offered by AIMR*
Internal	Partners at Law Firm*	Other Department Members and University*	Actuarial Managers (Associates and Fellows)	Financial Managers
COMPENSATION	Linked to Knowledge, Skills, and Performance Profit sharing at Partner level.	Linked to Knowledge, Skills, and Performance	Linked to Passing CAS Exams	Linked to Performance and Passing CFA Exams

* Indicates primary means of skill assessment

career development has a clear progression in teaching (Fuller, 1969; Huberman, 1988; Leithwood, 1990).

-- Insert Table 1 here. --

IMPLICATIONS FOR COMPENSATING TEACHERS

Table 1 provides a summary of the compensation and career development paths for attorneys, professors, actuaries, and financial analysts. The similarities and differences in the means by which compensation is used to support career development in each of these professions have interesting implications for the development of a compensation system in education which better supports the career development of teachers. Two main lessons from the four professions are discussed below, with implications for the development of a compensation system for teachers that recognizes and rewards skill and knowledge development needed to create and sustain high organizational performance.

Lesson I: The teaching profession could benefit from a compensation and career development system designed with elements of skill-based pay.

As Table 1 shows, all four professions identify three to

four major steps in career progression. The time it takes for individuals to demonstrate their development of skills varies depending on individual initiative and the structure of the skill assessment process in the particular profession. In each case, the knowledge and skills needed to progress from one step to the next are identified and assessed by members of the profession. Each of the four professions tends to link sizable increases in compensation with mastery of significant skill blocks, such as promotion from associate attorney to partner, assistant professor to associate professor, and associate to fellow actuary.

While responsibility for professional growth and development in key skill areas is largely left to the individual in each of these professions, the organizations (firms, universities, companies, and professional associations) tend to provide time, funds, information, and sometimes formal training to encourage the development of these skills.

This research suggests that teaching, too, might benefit from the development of a compensation system with elements of skill-based pay. Applying the design principles of the four complex, knowledge-based professions examined here suggests that such a system would include:

- Three to five identifiable levels of career progression, signifying the attainment of specific knowledge and skill

blocks.

- Leadership and participation by members of the teaching profession in identifying and assessing relevant knowledge, skills, and professional conduct.
- Significant increases in compensation associated with movement from one level to the next, as an incentive for teachers to continue to develop professional knowledge and skills needed by the organization.
- Investment of time and resources by the organization and the individual teacher to obtain the knowledge and skills needed to move from one level to the next.

Lesson II: Teacher knowledge and skills should be identified and assessed both internally and externally by members of the teaching profession.

Organizational needs and characteristics determine the degree to which the skill-based pay system should be designed and assessed internally by the organization or externally by a recognized regional or national professional body. Peer identification and assessment seem to be prevalent within the organization when the knowledge and skills to be assessed are unique to the needs of that particular organization. Peer assessment occurs outside the organization when there is a clear

and identifiable body of knowledge needed by all members of the profession.

In the case of attorneys, the state bar exam assesses the broad knowledge needed by all attorneys, while the partners at the particular law firm identify and assess the knowledge and skills needed by that particular firm. Alternatively, for actuaries and financial analysts, the knowledge and skill requirements are essentially the same throughout the profession, so the assessment of skills is primarily external. At research universities, skill blocks are identified and assessed within the institution by professors using criterion developed externally through a process of peer review. This external reference is needed because the professors assessing skill development within the institution may be from different disciplines with different approaches and expectations. In all four professions, the presence of a recognized external assessment provides assurances to the public about the quality and credibility of the professional organization.

The experience of these professions suggests that for teachers, some combination of internal and external skills assessment may also be desirable. There are clearly some aspects of teaching that are universal: knowledge of subject matter; pedagogical skills; and the ability to access, analyze, and apply

relevant educational research findings to leadership in the classroom, the school, and the profession. In addition, some types of knowledge and skills may be specific to a particular school. For example, schools following an instructional model (e.g., accelerated schools (Hopfenberg, Levin & Associates, 1993)) or those with unique student needs (e.g., full inclusion special education programs, large non-English speaking populations, gifted students) may require specialized pedagogical approaches.

With compensation linked to skill mastery, schools could reward the development of depth skills (e.g., subject matter and instructional techniques needed to implement curriculum frameworks), breadth skills (e.g., multiple subject-matter credentials; counseling) and vertical skills (e.g., management, teamwork, and leadership skills).

For skills required by all teachers, a professional body (e.g., at the national, regional, or state level) could identify and assess key skills needed by teachers and schools to effectively meet current challenges. Such a program could incorporate coursework developing breadth, depth, and vertical skills. School districts or individual schools could then decide which skills were most needed at the local level, and could structure their reward systems appropriately.

An external assessment of teacher knowledge and skills would have numerous benefits. First, external assessments designed by teachers may be viewed as more objective than assessments by local districts or school administrators. Second, external assessments could be used by parents and the public as a measure of the level of expertise of the teachers, in much the same way as the external assessments of financial analysts serve investors. Third, an external body would eliminate the redundancy and high cost of 15,000 school districts conducting separate assessments of teacher skills.

What would an external assessment of teacher knowledge and skills look like, and who would implement it? A number of professional organizations are currently working to define a relevant body of knowledge and skills for teachers, and to develop assessments to measure it. They include the Educational Testing Service (ETS), the National Council for Accreditation of Teacher Education (NCATE), the National Board for Professional Teaching Standards (NBPTS), and the Interstate New Teacher Assessment and Support Consortium (INTASC).

The ETS has developed PRAXIS to replace its National Teacher Examination. PRAXIS has three components:

- PRAXIS I, designed as an entrance examination to teacher education programs, assesses reading, writing, and basic

math skills.

- PRAXIS II assesses subject matter competency, and is designed to be taken after college students have completed their coursework; and
- PRAXIS III is designed for use in the second or third year of teaching as part of licensure requirements. It uses interviews, classroom observations, and examination documents to assess beginning-level teaching skills.

The new PRAXIS system is just beginning to be implemented by states (Murnane, 1995).

NCATE has just begun a four-year project to develop standards for teacher preparation programs which are aligned with curriculum content standards being developed by teacher subject-matter associations, such as the National Council of Teachers of English, the International Reading Association, and the National Council for the Social Studies. The project will also enable states to link licensure requirements with the new accreditation standards (Wise, 1995).

The National Board for Professional Teaching Standards (NBPTS) was established in 1987 to identify and assess a body of knowledge that expert teachers should know and be able to do. Assessments in a total of 33 separate specializations are planned, and results of the first assessments were announced in

January 1995, when 81 teachers (out of a total of 289 applicants) were identified as Board Certified. Several states and districts throughout the country are supporting Board certification by paying the $975 fee to participate in the assessment, by rewarding teachers who complete the assessment process, and by rewarding teachers who achieve Board Certification status (NBPTS, 1995).

Also in 1987, the Council of Chief State School Officers began to work in tandem with the NBPTS to establish INTASC, an effort to develop teacher licensing requirements which are compatible with National Board Certification. "These are the standards that embody the kinds of knowledge, skills, and dispositions that teachers need to practice responsibly when they enter teaching and that prepare them for eventual success as Board-certified teachers later in their careers" (INTASC, 1992, p. 1). They reflect the discipline-based knowledge, knowledge of research on teaching and learning, and pedagogical skills needed to perform as the primary instructor in an educational setting (INTASC, 1992).

The ETS, NCATE, NBPTS, and INTASC are all attempting to align their efforts with the curriculum content standards being developed by professional subject-matter associations. Thus, a body of knowledge thought to be needed by all teachers and means

of assessing that knowledge -- two important components of external assessment of teacher skills and knowledge -- are now being developed by several organizations working in tandem.

However, still missing from this schema is a clearly identifiable professional career progression for teachers. The system lacks an intermediate assessment of teacher skill and knowledge, and a clear progression in the teaching career, from (for example) assistant, to associate, to expert teacher. This assessment could be developed by any one, or a combination of the groups described above. Wherever such an intermediate examination is developed, it is critical that it be aligned with entry level skills and expert teaching skills measured by the assessments currently being developed to provide clear signals to teachers about the kinds of knowledge and skills they should be developing.

At the local level, districts could support teacher efforts to develop their skills by providing enrichment opportunities, time, and resources to facilitate knowledge and skill development. In addition, schools and districts may wish to identify and assess the unique skills and knowledge requirements needed to achieve organizational goals of that particular school. In doing so, schools may choose to reward teachers for developing

skills which may not be recognized by the external certification process. In addition, schools may select particular skills in the external certification process which are valued more highly, and place a larger value on these skills to ensure that the skills being promoted are those which are needed in the local context.

Although the skill identification and assessment process is time consuming, some districts have undertaken local skill-based pay initiatives. For example, Douglas County, Colorado provides bonuses for teachers who master skill blocks identified by the district as important to the proper functioning of the school. The skill-based pay component is being phased in gradually (beginning in 1994-95), but will eventually reward teachers for "skills acquired, applied, and demonstrated that support the goals of the school district" (Douglas County School District, 1994).

CONCLUSIONS

While the single salary schedule currently rewards teachers for skills and knowledge to the extent that they are measured by graduate course credits and years of teaching experience, effort is rarely made to determine whether the skills and knowledge acquired are being incorporated into teacher's work in the school

or classroom. Alternative compensation systems utilizing more direct incentives for the development of teachers' knowledge and skills have the potential to improve both the career development of teachers and their performance toward other organizational goals, such as increased levels of student achievement. More direct skill-based pay programs could encourage teachers to obtain the skills needed to be more effective in their particular school setting, rather than simply encouraging teachers to take any graduate course work. Additionally, such skill-based pay programs would create incentives for teachers to be strong advocates for high quality professional development activities, focused more directly on local needs and organizational objectives.[3]

The similarities and differences of the skill-based pay and career development models for attorneys, professors, actuaries, and financial analysts provide a number of lessons for better understanding how skill-based pay and collective incentives could be used in the teaching profession. Most importantly, the experience of these four professions suggests that skill-based pay is a workable strategy. Salary increments can be successfully based on the development of professional knowledge and skills. In professional organizations, skills are assessed by more experienced members of the profession. Relevant

knowledge and skills are identified and assessed externally when there is a clear body of knowledge needed by all members of the profession, and internally to meet the human capital specific to that particular organization.

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Endnotes:

1. Forty of the fifty states have a mandatory continuing legal education (CLE) requirement. Of these, most states require 12-15 hours of CLE per year, including 1-2 hours in legal ethics or professional responsibility.

2. The seven topics which comprise the "Body of Knowledge" are: financial accounting, quantitative analysis, economics, fixed-income securities analysis, equity securities analysis, portfolio management, and ethical and professional standards.

3. This "demand pull" effect is apparent in the private sector, where companies with skill-based pay plans devote on average two percent of payroll to training, compared to only 1.4 percent for all firms (Jenkins et al., 1992).